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Indian Standard

METHODS OF TEST FOR PULP

PART I WATER SOLUBILITY OF PULP

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Indian Standard

METHODS OF TEST FOR PULP

PART I WATER SOLUBILITY OF PULP

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Indian Standard

METHODS OF TEST FOR PULP

PART I WATER SOLUBILITY OF PULP

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 26 June 1971, after the draft finalized by the Paper Sectional Committee had been approved by the Chemical Division Council.

0.2 For obtaining good quality of paper, it is essential that the pulp which goes into the manufacture of paper is properly cooked and bleached. Formulation of this standard had been taken up in order to guide the people working in pulp and paper mills for the methods to be adopted for pulp analysis.

0.3 In reporting the results of a test or analysis made in accordance with this standard, if the final value, observed or calculated, is to be rounded off it shall be done in accordance with IS:2-1960*.

1. SCOPE

1.1 This standard prescribes the cold water and the boiling water solubilities of the pulp.

2. QUALITY OF REAGENTS

2.1 Unless otherwise specified, pure chemicals and distilled water (*see* IS:1070-1960†) freshly boiled and cooled, shall be employed in the tests.

NOTE—'Pure chemicals' shall mean chemicals that do not contain impurities which affect the results of analysis.

3. COLD WATER SOLUBILITY

3.1 Procedure—Take about 2 g of clean, representative sample of the air-dry pulp. Weigh the sample exactly to 0.1 mg. At the same time weigh out a separate sample for determination of dry matter in pulp. Place the air-dry sample in 500 ml beaker and submerge it in 300 ml of distilled water. Let the beaker stand for 48 hours at room temperature

*Rules for rounding off numerical values (*revised*).

†Specification for water, distilled quality (*revised*).

keeping the contents frequently stirred. Filter the mixture on a tared alundum crucible and wash the residue with cold distilled water. Dry the crucible for about 4 hours at $103 \pm 2^\circ\text{C}$. Place the crucible in a stoppered weighing bottle, cool in a desiccator and weigh.

3.2 Calculation—Carry out two determinations and calculate as follows:

$$\text{Water soluble matter, percent by weight} = \frac{X - r}{X} \times 100$$

where

X = initial weight of pulp in g, calculated on oven-dry basis;
and

r = weight of pulp in g calculated on oven-dry basis after extraction.

3.3 Report the result as a mean of the two determinations to two decimal places.

4. BOILING WATER SOLUBILITY

4.1 Procedure—Take about 2 g of representative sample of the air-dry pulp. Weigh the sample exactly to 0.1 mg. Determine the dry contents in the sample as before. Reflux the sample in a long neck flask fitted with a reflux condenser with 100 ml of distilled water for 3 hours in a boiling water bath, the water level of which is maintained constant, just above the solution in the flask. Transfer the contents of the flask to a tared alundum crucible and wash with hot distilled water. Dry the contents at $103 \pm 2^\circ\text{C}$ for about 4 hours. Cool in a desiccator over anhydrous calcium chloride and weigh in a stoppered weighing bottle.

4.2 Calculation—Carry out two determinations and report as a percentage on oven-dry basis as in 3.2.